

III. REMARKS

1. Claims 14, 15, 17, 18, 19, 24, 25, 28-32, 34, 36, 37, 39, 40-46, 50-54, 56 and 58-67 are amended. Claims 21-23, 26, 27, 33, 35, 38, 47-50, 55 and 57 are cancelled without prejudice. Claims 69-73 are new.

2. Claims 14, 15, 17-19, 21, 22, 26-29, 31-33, 39-51, 53-55 and 61-67 are not unpatentable over Watanabe in view of Anderson et al. ("Anderson") under 35 U.S.C. §103(a).

Claims 14, 42 and 64 have been amended to recite forwarding a possibly invalid demultiplexed signal to a corresponding decoder for the logical channel and further providing the decoder with an error type indication for use by the decoder during decoding of the demultiplexed signal to enable recovery from the error. This is not disclosed or suggested by the combination of Watanabe and Anderson.

In Applicant's invention, as recited in the claims, when an error in a demultiplexed signal is detected, the erroneous data is not simply discarded, but forwarded to its corresponding decoder, together with an indication of the error, so that an error recovery process can be performed during decoding of the signal. The Examiner notes that Watanabe does not disclose forwarding an error type indication to the video decoder. (page 3). Anderson does not overcome this deficiency. There are very clear distinctions between Anderson and Applicant's invention, particularly as it relates to the actions taken when an error is detected. For example, the error recovery mechanisms used by Anderson's system all seem to rely on discarding erroneous data and then interrupting the action of the decoders. This results in a situation where none of the erroneous data is forwarded to the

decoders for decoding and limits possible error correction/concealment measures to actions such as freezing or muting of the decoder output until new (error free) data is received. Nowhere does Anderson state explicitly or implicitly that any other, more sophisticated error correction or concealment operation can be performed and therefore provides no details concerning how error indications provided to the decoders could be used in any other way but to interrupt or freeze their output.

This distinction is supported by the teaching recited in claim 1 of Anderson and the specification. For example Anderson recites:

- 1) Column 8, lines 11 to 14: "If the transport loses synchronisation and the packet buffer doesn't contain any packets for the audio and video decoders, an error is signalled to the appropriate decoder so that it can mask the error appropriately". While no indication is given of the precise nature of the error masking to be performed, it is clear that no data is forwarded to the decoder when this kind of error occurs.
- 2) Column 8, lines 23 to 26: "If the packet parser detects the Transport Error Indicator is set, or that the byte is missing and the sync drop is greater than 0, or that the TS error signal is active, the packet is discarded".
- 3) Column 8, lines 41 to 45: "The Packet Parser incorporates a PID filter, such as a 32 entry PID filter. The 13 bit PID value is sent to the PID filter to determine if a match occurs. Packets that match a PID filter entry are forwarded, while all other

packets, including null packets, are discarded". In this way a packet with an invalid PID (Packet Identification) will be discarded, together with all empty packets. (See also column 8, lines 58 to 64).

- 4) Column 9, line 66 to column 10, line 3: "A system time base discontinuity is also signalled to the decoders on the first video or audio packet following the discontinuity. The application or host processor can be interrupted upon arrival of a discontinuity indicator." Again, this suggests very strongly that decoding is suspended when an error occurs.
- 5) Column 11, lines 48 to 51: "The transport demultiplexor of the invention checks the CRC value of table sections against the value coded in the stream. Those sections that do not pass the CRC check are discarded, and the application is optionally notified".
- 6) Column 12, lines 46 to 51: "For all types of system data the transport demultiplexor notifies the processor through an interrupt if a PID stream error occurred on data delivered to the DRAM or other memory. The front-end units discard packets with errors before the error-containing packets are loaded into the packet buffer".
- 7) Column 12, lines 55 to 58: "If any type of error is found while unloading a table section, the current section is discarded and a Memory queue Write Pointer is moved back to the end of the previous valid section".

Thus, it is clear that the errors in Anderson are discarded and not forwarded as in Applicant's invention.

The approach adopted by Applicant's invention not only differs technically with respect to that adopted by Anderson, but also offers distinct advantages compared with Anderson's method. More specifically and, as explained above, the range of error correction/concealment options available in Anderson's system is rather limited (see Anderson's claim 1, for example). The present invention, on the other hand, enables use of far more varied and sophisticated correction/concealment methods which seek to recover or reconstruct the erroneous data rather than simply discarding it. This results in a much improved level of error correction/concealment compared with Anderson's system, and leads to enhanced perceptual quality of the decoded data (e.g. video, audio, etc.).

Thus, claims 14, 42 and 64, as amended, are not disclosed or suggested by Watanabe in view of Anderson, and should therefore be allowable. Claims 15-41, 43-63 and 65-73 should at least be allowable in view of their dependencies.

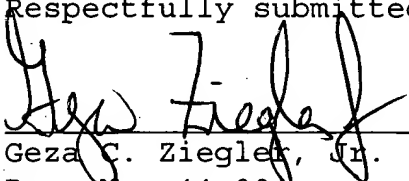
3. Claims 30 and 52, as amended, are not unpatentable over Watanabe in view of Anderson and further in view of Yamanaka et al. ("Yamanaka"). The claims should be allowable at least by reason of their respective dependencies on claims 14 and 42 as noted above.

4. Claims 16, 20, 23, 34-38 and 56-60, are not unpatentable over Watanabe in view of Anderson (U.S. Patent No. 6,026,506) and further in view of Anderson (U.S. Patent No. 6,072,771) under 35 U.S.C. §103(a). For the reasons stated above, the independent claims should be allowable. These dependent claims should also be allowable, at least by reason of their respective dependencies.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$950 is enclosed for a three-month extension of time. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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Date

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